EVOLVE: The Australian Rheumatology Association's 'top five' list of investigations and interventions doctors and patients should question

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ABSTRACT

Background: The EVOLVE (evaluating evidence. enhancing efficiencies) initiative aims to drive safer, higher-quality patient care through identifying and reducing low-value practices.

Aims: To determine the Australian Rheumatology Association's (ARA's) 'top 5' list of low-value practices.

Methods: A working group comprising 19 rheumatologists and three trainees compiled a preliminary list. Items were retained if there was strong evidence of low-value and there was high or increasing clinical use and/or increasing cost. All ARA members (356 rheumatologists and 72 trainees) were invited to indicate their 'top 5' list from a list of 12 items via MonkeySurvey in December 2015 (reminder February 2016) .

Results: 179 rheumatologists (50.3%) and 19 trainees (26.4%) responded. The top 5 list (percent of rheumatologists including item in their top 5 list) was: Do not perform arthroscopy with lavage and/or debridement for symptomatic osteoarthritis of the knee nor partial meniscectomy for a degenerate meniscal tear (73.2%); Do not order ANA testing without symptoms and/or signs suggestive of a systemic rheumatic disease (56.4%); Do not undertake imaging for low back pain for patients without indications of an underlying serious condition (50.8%); Do not use ultrasound guidance to perform injections into the subacromial space as it provides no additional benefit in comparison to landmark-guided injection (50.3%); and Do not order anti dsDNA antibodies in ANA negative patients unless the clinical suspicion of SLE remains high (45.3%).

Conclusions: This list is intended to increase awareness among rheumatologists, other clinicians and patients about commonly used low-value practices that should be questioned.

Key words: EVOLVE, evidence-based practice, implementation, low-value care, rheumatology

Introduction

The cost of health care in Australia is growing faster than population growth. For example there was a near doubling of health expenditure over the decade 2001-02 to 2011-12.[1] This has placed an increased focus on health care quality, affordability and value. The Royal Australasian College of Physicians (RACP) EVOLVE (evaluating evidence. enhancing efficiencies) initiative is a clinician-led partnership between the College and its specialty societies. It aims to drive safer, higher-quality patient care through identifying and reducing low-value medical care, defined as tests, treatments or procedures that are overused, inappropriate or of limited effectiveness and/or potentially harmful.[2]

Modelled on Choosing Wisely initiatives in the United States and other countries,[3] and working in conjunction with Choosing Wisely Australia,[4] specialist physicians from over 20 medical specialities have completed or are developing their EVOLVE 'top five' lists of low-value clinical practices.[2] The guiding principles of EVOLVE are that the 'top five' list should be within or significantly impact the specialists' domain of practice with the potential to make a real impact in reducing low-value care; the practices should be either growing in use or currently commonly used; and use of the Delphi consensus method,[5] as the overarching methodology for identifying a 'top-five' list.

In this article we present the Australian Rheumatology Association (ARA) 'top five' list of the low-value practices.

Materials and Methods

The EVOLVE ARA working group comprised 19 rheumatologists and 3 advanced rheumatology trainees formed after a call for interested ARA members. At a face-to-face meeting in 2015, the guiding EVOLVE principles were discussed and it was agreed that items should be included if they were either primarily a rheumatologist issue or an issue that rheumatologists should advocate for on behalf of their patients.

A preliminary list of low-value clinical practices was created based upon the working group's clinical experiences, as well as consideration of potentially relevant items identified from lists generated by others.[6-10] The working group reduced the initial list to twelve items, noting that some items included multiple components. Two items were excluded (Do not prescribe bisphosphonates for patients at low risk of fracture, and Do not perform whole body bone scans for diagnostic screening for peripheral and axial arthritis in the adults), as these were not considered relevant to the Australian context.

Small teams for each topic were formed to review the evidence and determine if the preliminary list of low-value practices met all of the following criteria:

i) Strong evidence of low-value clinical practice from a literature review; and

ii) Evidence of high or increasing clinical use and significant and/or increasing cost to the Australian community based upon publicly available Medicare Benefits Schedule (MBS) item usage and cost data relating to each statement from 2004 to 2015.[11]

Medicare Statistics provides data for MBS item numbers divided by the number of Medicare participants enrolled at the end of each month. For this project, usage data are expressed as number of services per financial year, and costs are expressed as total benefits paid out for these services by financial year. The number of services and costs included in the Medicare Statistics data only relate to services that are performed by a registered provider, qualify for the Medicare benefit, and for which a claim has been processed by Medicare Australia. They do not include services provided by hospital doctors to public patients in public hospitals or services that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account. Another important caveat of MBS data is that some single items can be used for multiple indications and the specific indication for which that item is used is not collected. For example, while there are MBS item numbers for ultrasound-guided injections, these do not differentiate between ultrasound guided injections for different body parts. In most, but not all instances we excluded item numbers for diagnostic imaging if the site being imaged was not specified.

One item, 'Do not order an HLA-B27 unless spondyloarthritis is suspected based on specific signs or symptoms', was removed from the list after the review revealed it did not fulfil the criteria of high or increasing usage or high cost in Australia. Following review of the evidence, a new item was included: 'Do not order anti-neutrophil cytoplasmic antibodies (ANCA) testing for diagnosis of vasculitis unless one of the consensus guideline indications is present'. We retained two items, 'Do not use ultrasound guidance to perform injections into the sub-acromial space (or trochanteric bursa), as it provides no additional benefit in comparison to landmark-guided injection', because even though it wasn't possible to extract the exact number and cost of these subsidised ultrasound-guided injections,

consensus among the working group was that a large and increasing number of ultrasound-guided injections are being performed (inappropriately) into these sites.

The working group refined the 'do-not-do' statements, and wrote brief summaries of the evidence in support of it being a low-value clinical practice using the NHMRC recommendations for summarising the level of evidence, strength of recommendation and quality.[12]

An anonymous survey was created in SurveyMonkey.[13] All ordinary (356 rheumatologists) and associate (72 rheumatology trainees) ARA members were invited to participate via email on 10 December 2015 with a reminder sent 17 February 2016. The ARA Board approved the survey and ethical approval was not sought.

Respondents were provided with the survey purpose and background information about EVOLVE, presented with the 12 proposed recommendations for not undertaking a particular test, treatment or procedure and a summary of the evidence for each recommendation. They were asked to select the five recommendations for which they considered the evidence to be the strongest. They could also provide comments for any of the statements in free text. Finally they were asked to provide some demographic and clinical practice details: gender, setting in which the majority of hours are worked (public, private, academic, retired, other), fellowship status (fellow for <10 years, 10-20 years, 21-30 years or >30 years), and practice location (urban/metropolitan, large rural centre, small rural centre, remote). For the purposes of our 'top five' list we excluded trainee responses.

Results

Respondents included 179 rheumatologists (50.3% response rate) and 19 trainees (26.4% response rate). The majority of rheumatologists were male (n=115, 64.3%, 4 missing responses) and just over half worked primarily in private practice (n=95, 53.1%, 5 missing responses).

Table 1 presents the proportion of rheumatologists who put each of the 12 statements into their 'top five' list in order of ranking. Endorsement of individual statements ranged from 20.7 to 73.2% of respondents. The highest endorsement was for not performing arthroscopic treatments for knee osteoarthritis and/or degenerative meniscal tears (73.2%), while over half endorsed not performing ANA testing for patients without rheumatic symptoms (56.4%), imaging for low back pain in those without specific indications (50.8%), and ultrasound guidance for shoulder injections (50.3%). Nearly all of the comments indicated that respondents would have liked to endorse more than five statements. Trainee responses were similar with four of the same recommendations chosen in the top 5 although there was even stronger endorsement for not performing arthroscopic treatments for knee osteoarthritis and/or degenerative meniscal tears (84.2%) and not performing ANA testing for patients without rheumatic symptoms (73.7%).

The top five recommendations together with a summary of the evidence that they are a low-value test or treatment and their current use/cost is summarised below. The remaining seven recommendations are described in Appendix 1.

Recommendation one: Do not perform arthroscopy with lavage and/or debridement or partial meniscectomy for patients with symptomatic osteoarthritis of the knee and/or degenerate meniscal tear

Strength of recommendation: A

NHMRC Level of evidence: I

Category of evidence: Ia

There is consistent evidence to indicate that arthroscopic lavage and/or debridement to treat people for symptomatic knee osteoarthritis, and/or partial meniscectomy for patients with a degenerate meniscal tear (with or without underlying osteoarthritis), is no more effective than placebo surgery or non-operative alternatives.[14-19] There appears to be a high rate of conversion from knee arthroscopy to total knee arthroplasty, which rises with increased age, further suggesting arthroscopic surgery should be avoided in people over the age of 50 years.[20-22] Additionally, arthroscopy is associated with peri and post-operative risks and considerable cost.[18, 23]

To determine the trend in performance of knee arthroscopic treatment for knee osteoarthritis over time we considered 5 of 9 MBS codes for knee arthroscopic washout, debridement and/or partial meniscectomy (Figure 1). In total these item numbers, in people with private health insurance, increased in usage from 2004 to 2012 financial years, then appeared to plateau, and reduced by 5.9% between 2012 and 2015. Over the entire period there was an almost 2% p.a. increase. The total benefit paid out for these services was $17.3 million in 2004 and almost $27.1 million in 2015, corresponding to an annual growth rate of 4.15%.

Recommendation two: Do not order anti-nuclear antibody (ANA) testing in patients without symptoms and/or signs suggestive of a systemic rheumatic disease

Strength of recommendation: B

Category of evidence: III-2

ANAs are present in healthy individuals and ANA testing is only useful in patients with symptoms and/ or signs of a rheumatic disease where it can aid in the confirmation or exclusion of systemic connective tissues diseases. ANA testing has a very high negative predictive value for excluding connective tissue diseases. However a positive ANA does not have a high positive predictive value for diagnosing these conditions in isolation, and further sub-serology testing is needed to accurately diagnose and classify these conditions.[24, 25]

Despite guidelines and recommendations not to perform an ANA test in patients without symptoms and/or signs suggestive of a connective tissue disease,[26-30] there has been a steady increase over the last decade in the number of MBS-funded ANA tests ordered (Figure 2). The total benefits paid out for these services has increased from $7.76 million in the 2004 financial year to $10.96 million in the 2015 financial year, corresponding to an annual growth rate of 3.2%.

Recommendation three: Do not undertake imaging for low back pain in patients without indications of a serious underlying condition

Strength of recommendation: A

NHMRC Level of evidence: I

Category of evidence: Ia

Most episodes of low back pain (~90%) do not require imaging. Imaging may identify irrelevant incidental findings and increase the risk of exposure to unnecessary, and sometimes invasive treatment, in addition to increasing costs.[31-33] For patients with low back pain and no suggestion of serious underlying conditions there are no significant differences in pain or disability outcomes between immediate imaging as compared with usual care without imaging.[34, 35]

MBS-funded imaging for low back pain has been increasing consistently since 2004 primarily due to increased numbers of CT and MRI scans (Figure 3). The total MBS benefit paid out for MRI imaging has grown from $14.76 million in 2004 to almost $27.96 million in 2015, an annual growth rate of almost 6%. The total benefit paid out for the other imaging modalities of CT imaging and radiography has also grown from $58.4 million in 2004 to $99.08 million in 2015, an annual growth rate of 4.9%.

Recommendation four: Do not use ultrasound guidance to perform injections into the sub-acromial space, as it provides no additional benefit in comparison to landmark-guided injection

Strength of recommendation: A

NHMRC Level of evidence: I

Category of evidence: Ia

Currently there is no high quality evidence to support the superiority of ultrasound-guided subacromial injections compared with injections guided by landmarks alone. Based upon moderate evidence from five trials, a Cochrane review was unable to find any advantage of ultrasound-guided injection over either landmark-guided or intramuscular injection.[36] These results are consistent with a more recent trial.[37] In view of the currently available data and the significant added cost, there is little clinical justification in using ultrasound to guide injections for shoulder pain.

The exact number and costs of subsidised ultrasound-guided injections into the subacromial space is unknown as there are two MBS item numbers that include an ultrasound-guided intervention and neither specify a body site. We consider that a substantial number of these

procedures are likely to have been performed for shoulder pain. There has been an annual increase of 26.8% in the number of ultrasound-guided injections for the period 2004 to 2015 (Figure 4). In the 2014/2015 financial year the total benefits paid through the MBS for ultrasound-guided injection was almost $27.5 million.

As a comparison the total benefits paid through the MBS for landmark-guided joint injections (MBS items 50124 and 50125) in the 2008/2009 financial year was $12.8 million. These were removed from the MBS on the 1st November 2009 due to a Budget decision by the government that these services are minor and routine in nature and can be delivered as part of a standard consultation. While removal of this MBS item may have resulted in a reduction in landmark-guided injection in primary and secondary care, it may have also contributed to the observed increase in more expensive image-guided injections. Several respondents made comments about the lack of reimbursement for injection, subsequent deskilling of GPs, long wait times for public rheumatology clinics, and radiologist-driven referrals as possible reasons for the increase in image-guided injection.

Recommendation five: Do not order anti-double-stranded (ds) DNA antibodies in ANA negative patients unless clinical suspicion of systemic lupus erythematosus (SLE) remains high

Strength of recommendation: B

Category of evidence: III-2

International recommendations advise testing for anti-dsDNA antibodies only after detecting a positive ANA in patients with symptoms consistent with SLE.[25] In patients who are ANA negative, anti-dsDNA should only be ordered in clinical situations where the pre-test

probability of SLE is very high.[30] Where positive, repeating anti-dsDNA antibodies titres is a useful test for monitoring disease activity, especially in lupus nephritis.[38]

The number of MBS funded anti-dsDNA tests performed over 2004 to 2015 has steadily increased (Figure 5), and the total benefits paid out for these tests more than doubled in the last decade from $2.1 million dollars in 2004 to $4.4 million dollars in 2015. This amounts to an average per annum growth of almost 7%. There is no epidemiologic data suggesting that the incidence of SLE is rising. For example over roughly the same time period for which hospital separations data are available (2004 to 2014), the number of hospital separations with a principal diagnosis of SLE increased by less than 2.8% p.a.[39]

Discussion and Conclusion

In this paper we report the top five evidence- and consensus-based recommendations for tests and procedures that Australian rheumatologists consider to be low-value care. An additional eight recommendations, while not included in the top five, were also endorsed by a significant number of rheumatologists. The most endorsed recommendation regarding arthroscopy osteoarthritis of the knee and/or degenerate meniscal tear is consistent with the recently launched Australian Clinical Care Standards for Osteoarthritis of the Knee,[40] as well as new clinical practice guideline published in the BMJ.[41]

While we also include similar recommendations regarding ANA, ENA, dsDNA testing and frequency of BMD monitoring to some other countries, other recommendations were not transferrable to the Australian context. For example items such as testing for Lyme disease and prescribing biologic agents prior to methotrexate were not deemed applicable to

Australia due to differences in disease prevalence and mandated Medicare restrictions. This highlights the importance of creating recommendations based on local clinical practices.

In order for our 'top five' recommendations to be implemented into daily practice consideration of enablers and barriers will be required. As a first step we intend to disseminate our recommendations widely to clinicians through peer-review publication, news sites, conferences and presentations; and to consumers through the use of social media such as twitter. Additionally, some of our recommendations may be supported by other initiatives that are already taking place such as the MBS review,[42] and new models of care for back pain.[43] While this means that we will not be able to determine the precise impact of the ARA EVOLVE initiative, we plan to monitor the uptake of our recommendations using Medicare statistics data.

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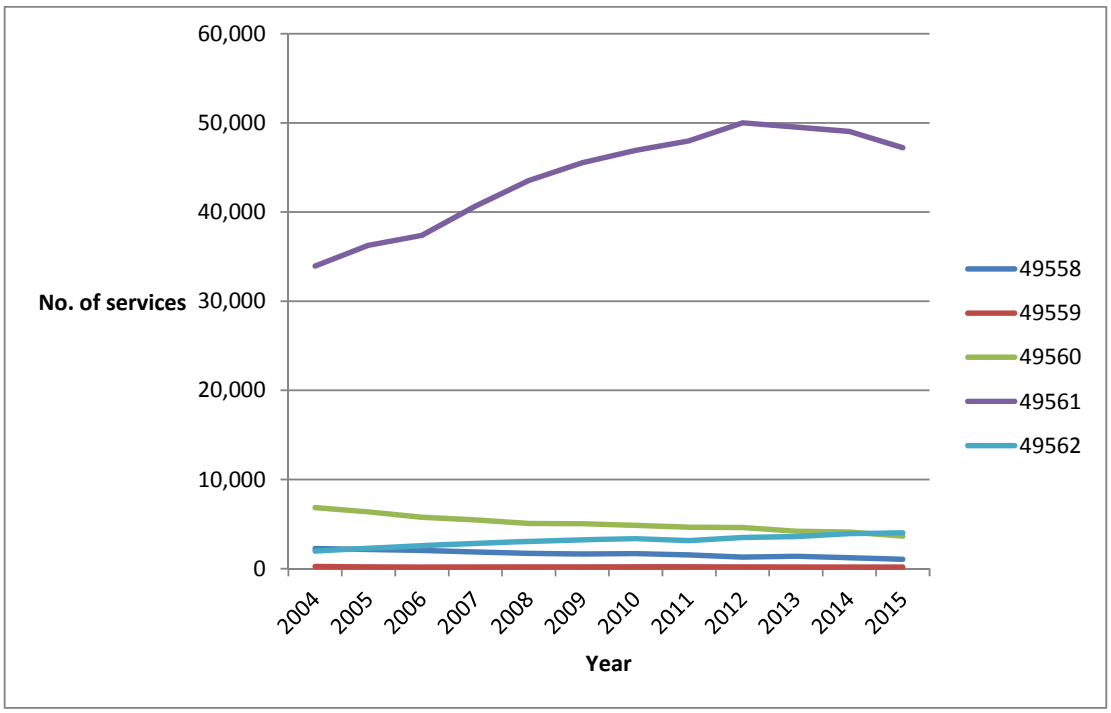
Table 1. Support for inclusion of each recommendation to be in the top 5 list by all rheumatologists and by gender and public private practice, and by trainees*

Recommendations	Rheumatologists (N = 179) %	Male (N = 115) %	Female (N = 60) %	Public (N = 78) %	Private (N = 95) %	Trainees (N = 19) %
Arthroscopy for symptomatic OA or degenerate meniscal tear	73.2	80	63.3	66.7	82.1	84.2
ANA testing without rheumatic symptoms	56.4	56.5	53.3	57.7	52.6	73.7
Imaging for low back pain without red flags	50.8	47.8	60.0	64.1	43.2	42.1
Ultrasound guided shoulder injections	50.3	52.2	46.7	46.2	52.6	36.8
Anti-dsDNA testing in ANA negative patients	45.3	44.4	45.0	43.6	44.2	52.6
DEXA scans more often than 2-yearly	44.1	39.1	55.0	47.4	43.2	31.6
Ultrasound guidance to perform trochanteric bursa injections	39.1	39.1	38.3	32.1	45.3	42.1
Shoulder ultrasound to diagnose non-specific shoulder pain	36.3	40.9	28.3	37.2	34.7	31.6

Ultrasound to investigate lateral hip pain	31.3	32.2	30.0	30.8	32.6	21.1
ENA testing in patients with negative ANA	27.9	28.7	25.0	21.8	31.6	42.1
ANCA testing for diagnosis of vasculitis	24.6	22.6	25.0	24.4	22.1	26.3
Glucocorticoid injections for non-specific low back pain, facet joint arthritis or spinal canal stenosis	20.7	16.5	30.0	28.2	15.8	15.8

*The percentage in each cell relates to the proportion of respondents that rated the item in their 'top five

Figure 1: MBS-funded arthroscopic washout, debridement and/or partial meniscectomy*



*MBS Item numbers included in Figure 1
49558: (KNEE, arthroscopic surgery of, involving 1 or more of: debridement, osteoplasty or chondroplasty – not associated with any other arthroscopic procedure of the knee region)

49559: (KNEE, arthroscopic surgery of, involving chondroplasty requiring multiple drilling or carbon fibre (or similar) implant; including any associated debridement or osteoplasty – not associated with any other arthroscopic procedure of the knee region)

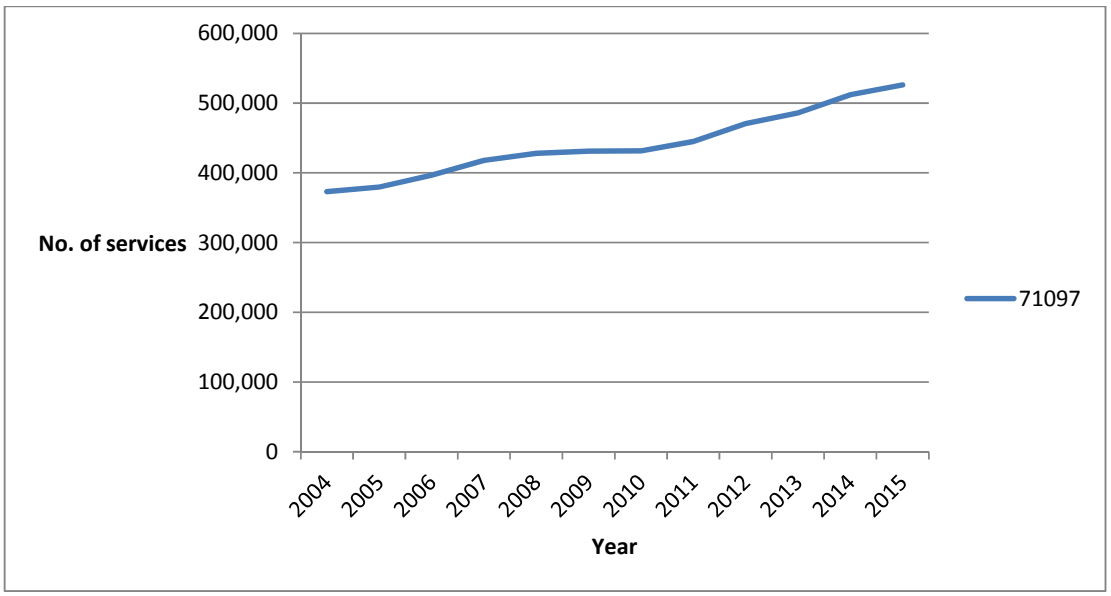
49560: (KNEE, arthroscopic surgery of, involving 1 or more of: partial or total meniscectomy, removal of loose body or lateral release – not being a service associated with any other arthroscopic procedure of the knee region)

49561: (KNEE, ARTHROSCOPIC SURGERY OF, involving 1 or more of: partial or total meniscectomy, removal of loose body or lateral release; where the procedure includes associated debridement, osteoplasty or chondroplasty – not associated with any other arthroscopic procedure of the knee region)

49562: (KNEE, ARTHROSCOPIC SURGERY OF, involving 1 or more of: partial or total meniscectomy, removal of loose body or lateral release; where the procedure includes chondroplasty requiring multiple drilling or carbon fibre (or similar) implant and associated debridement or osteoplasty – not associated with any other arthroscopic procedure of the knee region)

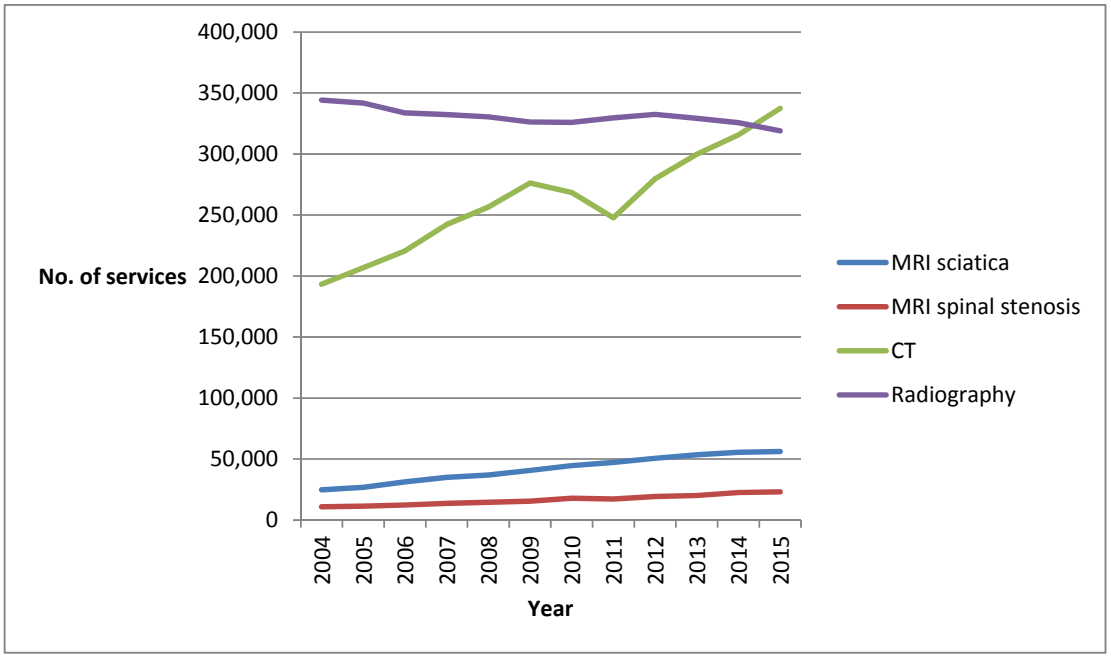
Figure 2: Number of MBS-funded antinuclear antibody tests in Australia, 2004 to 2015

testing*



*MBS Item numbers included in Figure 2
71907: Antinuclear antibodies - detection in serum or other body fluids, including quantitation if required

Figure 3: Number of MBS-funded plain radiographs and CT scans for low back pain and MRI for sciatica and spinal stenosis in Australia, 2004 to 2015*



*MBS Item numbers included in Figure 3

Radiography

58106 and 58111: SPINE, lumbosacral

Computed Tomography (CT)

56223, 56229: COMPUTED TOMOGRAPHY - scan of spine, lumbosacral region, without intravenous contrast medium

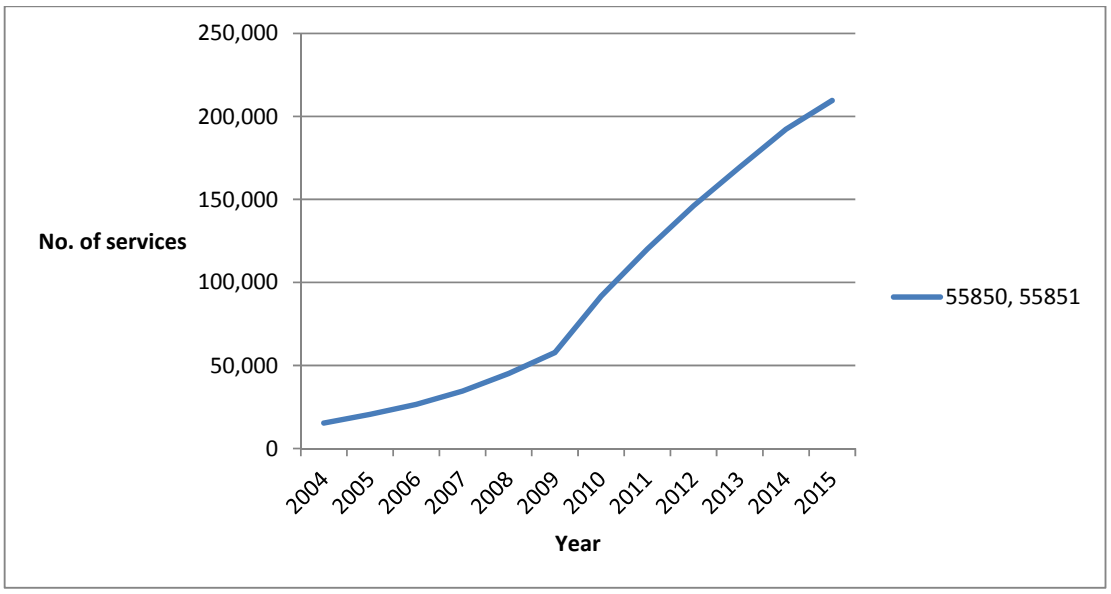
56226 and 56232: COMPUTED TOMOGRAPHY - scan of spine, lumbosacral region, with intravenous contrast medium and with any scans of the lumbosacral region of the spine prior to intravenous contrast injection when undertaken

Magnetic Resonance Imaging (MRI)

63176, 63191, 63234, 63262: sciatica

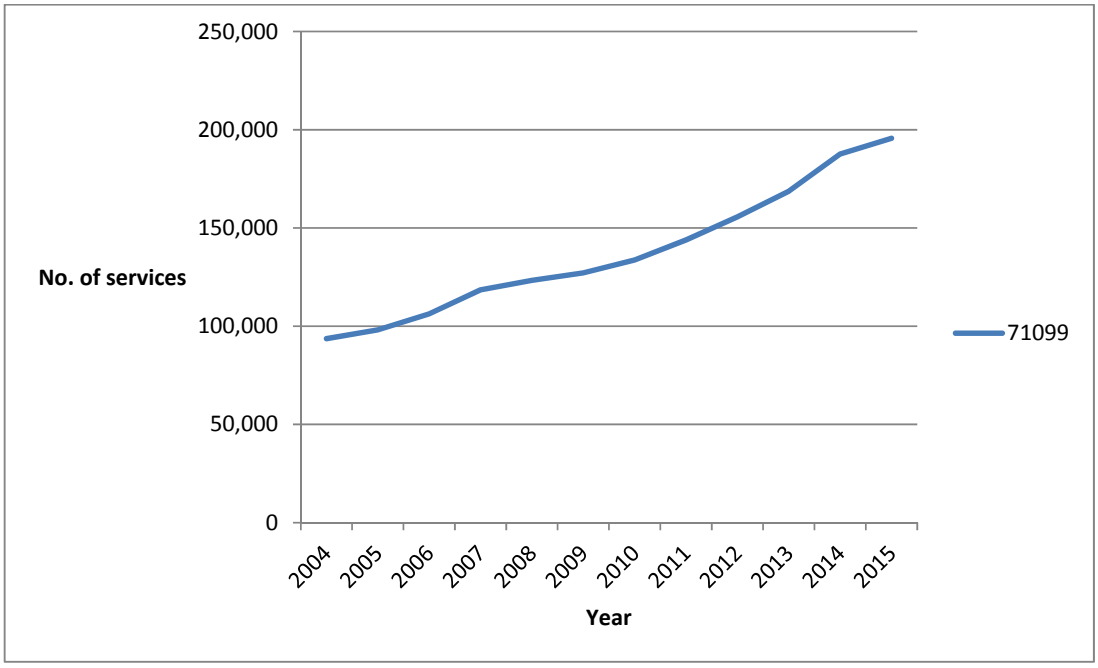
63179, 63192, 63237, 63263: spinal stenosis

Figure 4: MBS-funded ultrasound-guided injections for all musculoskeletal indications in Australia from 2004-2015*



*MBS Item numbers included in Figure 4
55850, 55851: MUSCULOSKELETAL CROSS-SECTIONAL ECHOGRAPHY, in conjunction with a surgical procedure using interventional techniques, inclusive of a diagnostic musculoskeletal ultrasound service, where the referring practitioner has indicated on a referral for a musculoskeletal ultrasound that a ultrasound guided intervention be performed if clinically indicated.

Figure 5: MBS-funded dsDNA testing in Australia from 2004 to 2015*



*MBS Item numbers included in Figure 5
71099: Double-stranded DNA antibodies - quantitation by 1 or more methods other than the Crithidia method